



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,872	09/15/2000	J Michael Sanchez	D/A0664	4185

7590

02/04/2003

John E. Beck  
Xerox Corporation  
Xerox Square - 20A  
Rochester, NY 14644

EXAMINER

BAREFORD, KATHERINE A

ART UNIT	PAPER NUMBER
----------	--------------

1762

6

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/663,872

Applicant(s)

SANCHEZ ET AL.

Examiner

Katherine A. Bareford

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-12 and 15-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

1. The amendment of Jan. 15, 2003 has been received and entered.

### *Claim Objections*

2. Claim 24 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 24, which depends from claim 22, which in turn depends from independent claim 21, requires "a second ultrasonicator adapted to ultrasonicate the filter member". However, parent claim 21, as amended on Jan. 15, 2003 also requires "a second ultrasonicator adapted to ultrasonicate the filter member". As a result, claim 24 provides no limitation that further limits the claim from which it depends.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 4-12 and 15-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1762

Claim 1, line 7, "primary articles" should apparently be "primary particles" for proper reference to the particles earlier described in the claim.

Claim 1, line 7, "primary articles are separated in the resulting sonicated stream", assuming that applicant means that "articles" is "particles", does applicant actually intends to mean that the particles "are separated from the resulting sonicated stream" as described in the specification at page 8, lines 5-10? Otherwise, as worded, the phrase would merely require that the particles not be re-agglomerated in the stream, so that the particles are separate from one another in the stream.

The other dependent claims do not cure the defects of the claims from which they depend.

*Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 21 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 472 459 A1 (hereinafter '459).

Claim 21: '459 teaches an ultrasonicator is provided to ultrasonicate a stream of liquid dispersion of agglomerated primary particles. See the abstract and figure 1 (the ultrasonic mill 26). The treatments with the ultrasonicator breaks up the agglomerated particles to provide a stream of de-agglomerated particles. See the abstract and figure 1. A filter member is provided

Art Unit: 1762

to filter the resulting ultrasonicated stream containing a dispersion of de-agglomerated primary particles. See the abstract and figure 1 (filter 30). A second ultrasonicator can be provided to ultrasonicate the filter member. See the abstract and figure 1 (note the ultrasonic transducers that the be incorporated in the filter).

Claim 26: '459 teaches a method to ultrasonicate a stream of liquid dispersion of agglomerated primary particles. See the abstract and figure 1 (the ultrasonic mill 26). The treatments with the ultrasonicator breaks up the agglomerated particles to provide a stream of de-agglomerated particles. See the abstract and figure 1. A filter member is provided to filter the resulting ultrasonicated stream containing a dispersion of de-agglomerated primary particles. See the abstract and figure 1 (filter 30). A second ultrasonicator can be provided to ultrasonicate the filter member during filtering. See the abstract and figure 1 (note the ultrasonic transducers that the be incorporated in the filter).

7. The rejection of claims 21-23 under 35 U.S.C. 102(b) as being anticipated by Kawasaki et al (US 5576075) is withdrawn due to applicant's amendments to the claims.

Claim 21: Kawasaki teaches an ultrasonicator is provided to ultrasonicate a stream of liquid dispersion of primary particles. Column 4, lines 30-50. The ultrasonicator would be able to treat agglomerated or unagglomerated particles, as the specific makeup of the dispersion is not part of the apparatus. A filter member is provided to filter the resulting ultrasonicate stream containing a dispersion of de-agglomerated primary particles. Column 6, lines 35-55.

Art Unit: 1762

Claim 22: a coater is provided to coat the filtered stream onto a receiver. Column 2, lines 35-55, column 20, lines 40-55 and figure 3.

Claim 23: the coated receiver is substantially free of agglomerated primary particles. Column 1, lines 5-20 and column 36, lines 1-10.

8. The rejection of claims 1, 2, 11 and 14 under 35 U.S.C. 102(b) as being anticipated by Min et al (US 4112549) is withdrawn due to applicant's amendments to the claims.

*Claim Rejections - 35 USC § 103*

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 4-7, 10, 12, 16-<sup>2</sup>~~30~~ and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al (US 5576075) in view of Hochberg (US 3890240).

Kawasaki teaches a method and apparatus for sonicating, filtering and coating. Column 1, lines 5-15 and column 6, lines 35-55. A stream containing a dispersion is subjected to a sonicating treatment. Column 2, lines 35-55. The dispersion contains primary particles. Column 1, lines 20-25 and column 6, lines 35-55. The resulting sonicated stream containing a dispersion comprised of de-agglomerated primary particles is then filtered. Column 6, lines 35-

Art Unit: 1762

55. The particles are separated in the resulting stream because they are deagglomerated. The filtered and sonicated stream is then coated onto a receiver surface. Column 2, lines 45-55.

Claim 5: the primary particles are present in the stream in an amount that is between 0-60 wt% based on the total weight of the stream. See, for example, column 21, line 50 through column 22, line 25.

Claim 6: the de-agglomerated particles have a volume average diameter than is between 0.005 and 20 micrometers. See, for example, column 21, line 50 through column 22, line 25 (the diameter of the ferromagnetic particles is 0.08 micrometers, and the thickness of the provided coating is 1.5 micrometers).

Claim 10: the carrier for the stream includes a continuous phase liquid solvent. See, for example, column 21, line 50 through column 22, line 25 and column 15, line 55 through column 16, line 5.

Claim 12: the sonication is accomplished with at least one ultrasonic member. Column 4, lines 30-50 and column 6, lines 35-55.

Claim 14: the de-agglomerated primary particles are further separated from the stream. (note the drying of the solvent after coating). See column 22, lines 15-25.

Claim 17: the re-agglomeration of the de-agglomerated primary particles can occur. Column 8, lines 1-20.

Claim 19: the stream can further comprise a surfactant. Column 17, line 45 through column 18, line 15.

Claim 27: as discussed above, Kawasaki teaches an ultrasonicator, a filter and a coater system.

Kawasaki teaches all the features of these claims except (1) that the particles are agglomerated before being sonicated, (2) the stream pressure measurement (claim 16), (3) analyzing the sonicated stream (claim 18), (4) the coated photoreceptor surface (claim 1, 27), (5) the primary particles as toner (claims 4, 7), (6) the photosensitive particles (claim 20). Kawasaki does teach that the surface can be coated before the application of the filtered sonicated coating material. See column 2, lines 45-50.

Hochberg teaches a process for providing liquid dispersions of toner materials to be applied to a surface. Column 1, lines 5-15. The toner is in the form of particles including carbon black and a dye or pigment. Column 1, lines 55-68. The particles have a tendency to agglomerate, and it is necessary to control this agglomeration to provide desirable coating. Column 3, lines 15-35. As a way for dispersing the particles, Hochberg teaches high frequency, ultrasonic agitation. See column 20, lines 1-55. As taught, the particles would be photosensitive. See column 1, lines 5-30. The toner is applied to a charged photoconductive layer. See column 1, lines 15-30.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kawasaki to provide the missing features of these claims in order to provide a desirable coated surface. Specifically, it would have been obvious to (1) modify Kawasaki to provide that the initial dispersion to be sonicated contains agglomerated particles with the expectation of achieving a desirable de-agglomerated coating material, because Kawasaki

Art Unit: 1762

teaches that the dispersion as initially provided is readily susceptible to agglomeration (see column 1, lines 20-25 and 45-55) and Kawasaki provides no limitation on how long the dispersion can be made before sonication treatment must be carried out, while providing specific times for when the treatment must be provided once sonication starts (see column 5, line 60 through column 6, line 30). (2) it would further have been obvious to modify Kawasaki to provide analyzing stream pressure before filtering with the expectation of providing a desirable coating, because Kawasaki teaches filtering the stream, and it is conventionally known in the art of filtering that stream pressure affects the results of filtering. (3) it would further have been obvious to modify Kawasaki to provide analyzing the sonicated stream for various undesirable particles with the expectation of providing a desirable coating, because Kawasaki teaches sonication, and further provides examples of numerous analytical experiments on the stream so as to provide the optimum coating (see the examples). (4) It would further have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kawasaki to use the sonicating process to also sonicate toner particles in dispersion as suggested by Hochberg with an expectation of desirable coating results, because Kawasaki teaches a desirable sonication process to provide dispersed particles, and Hochberg teaches that it is desirable to sonicate toner particles in liquid to provide a desirable dispersed dispersion. (5) It would further have been obvious to provide resin with the particles so as to provide a desirable coating, given the teaching of Hochberg of using resin in the toner dispersion (see column 1, lines 60-65). (6) It would further have been obvious to modify Kawasaki in view of Hochberg to provide a coating photoreceptor substrate so as to provide a

Art Unit: 1762

desirable coating, given the teaching of Hochberg of the desirability of coating of the toner particles to such a substrate (see column 1, lines 15-30).

11. Claim 8-9 and 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki in view of Hochberg as applied to claims 1, 4-7, 10, 12, 16-20 and 27 above, and further in view of EP 472 459 A1 (hereinafter '459).

Kawasaki in view of Hochberg teach all the features of this claim except using a second sonicator to sonicate the filter (claim 15) and the filter purpose (claims 8-9).

However, '459 teaches an ultrasonicator is provided to ultrasonicate a stream of liquid dispersion of agglomerated primary particles. See the abstract and figure 1 (the ultrasonic mill 26). The treatments with the ultrasonicator breaks up the agglomerated particles to provide a stream of de-agglomerated particles. See the abstract and figure 1. A filter member is provided to filter the resulting ultrasonicated stream containing a dispersion of de-agglomerated primary particles. See the abstract and figure 1 (filter 30). A second ultrasonicator can be provided to ultrasonicate the filter member so as to further break up agglomeration. See the abstract and figure 1 (note the ultrasonic transducers that the be incorporated in the filter). The filter removes particles that would otherwise be undesirably large. See abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kawasaki in view of Hochberg to further provide a ultrasonicator for the filter as suggested by '459 with an expectation of desirable coating results, because Kawasaki in view of Hochberg teaches a desirable sonication process to provide dispersed particles that includes

Art Unit: 1762

filtration of the treated stream, and '459 teaches that it is desirable to further provide an ultrasonicator for a filter member after sonicating a stream of dispersed particles to break up the agglomeration so as to provide further de-agglomeration. It would further have been obvious to modify Kawasaki in view of Hochberg to provide that the filtering removes objectionable contaminants (i.e. particles of a size larger than the de-agglomerated particles) as suggested by '459 with an expectation of desirable coating results, because Kawasaki teaches filtering the sonicated dispersion, and '459 teaches that when filtering a sonicated dispersion, it is desirable to remove overly large particles.

12. Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki (US 5576075) in view of EP 472 459 A1 (hereinafter '459).

Kawasaki teaches a method and apparatus for using an ultrasonicator is provided to ultrasonicate a stream of liquid dispersion of primary particles. Column 4, lines 30-50. The ultrasonicator would be able to treat agglomerated or unagglomerated particles, as the specific makeup of the dispersion is not part of the apparatus. A filter member is provided to filter the resulting ultrasonicate stream containing a dispersion of de-agglomerated primary particles. Column 6, lines 35-55.

Claim 22: a coater is provided to coat the filtered stream onto a receiver. Column 2, lines 35-55, column 20, lines 40-55 and figure 3.

Claim 23: the coated receiver is substantially free of agglomerated primary particles. Column 1, lines 5-20 and column 36, lines 1-10.

Art Unit: 1762

Kawasaki teaches all the features of these claims except for the treatment using a second sonicator to sonicate the filter.

However, '459 teaches an ultrasonicator is provided to ultrasonicate a stream of liquid dispersion of agglomerated primary particles. See the abstract and figure 1 (the ultrasonic mill 26). The treatments with the ultrasonicator breaks up the agglomerated particles to provide a stream of de-agglomerated particles. See the abstract and figure 1. A filter member is provided to filter the resulting ultrasonicated stream containing a dispersion of de-agglomerated primary particles. See the abstract and figure 1 (filter 30). A second ultrasonicator can be provided to ultrasonicate the filter member so as to further break up agglomeration. See the abstract and figure 1 (note the ultrasonic transducers that the be incorporated in the filter).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kawasaki to further provide a ultrasonicator for the filter as suggested by '459 with an expectation of desirable coating results, because Kawasaki teaches a desirable sonication process to provide dispersed particles that includes filtration of the treated stream, and '459 teaches that it is desirable to further provide an ultrasonicator for a filter member after sonicating a stream of dispersed particles to break up the agglomeration so as to provide further de-agglomeration. The second sonicator treats the filter and thus can be used whether the coater is active or inactive, as long as the filtration process was desirably occurring.

Art Unit: 1762

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki in view of Hochberg as applied to claims 1, 4-7, 10, 12, 16-20 and 27 above, and further in view of Min et al (US 4112549).

Kawasaki in view of Hochberg teaches all the features of these claims except the gas carrier vehicle.

Min teaches a process for sonicating a stream containing a dispersion of agglomerated primary particles. Column 2, line 50 through column 3, line 10. The sonicated stream is further filtered. Column 4, lines 20-30. The stream includes a gas carrier, air. Column 3, lines 30-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kawasaki in view of Hochberg to use the sonicating process to also sonicate particles in dispersion in a gas stream as suggested by Min with an expectation of desirable coating results, because Kawasaki in view of Hochberg teaches a desirable sonication process to provide dispersed particles, and Min teaches that it is desirable to sonicate suspended in air as well as liquid.

14. Bodine (US 4337158) also teaches that it is desired to sonicate a filter used when solids are filtered out of a liquid.

*Response to Arguments*

15. Applicant's arguments filed Jan. 15, 2003 have been fully considered but they are not persuasive.

As to claim 1, applicant has argued that the Examiner has failed to point out any suggestion motivation or incentive in either reference for combining the teachings of Kawasaki with Hochberg to arrive at the applicant's coated photoreceptor. The Examiner has reviewed this argument, however, the Examiner disagrees. As discussed in the *Grounds of Rejection* above, the Examiner has provided a discussion as to why it would have been obvious to modify Kawasaki to combine with Hochberg. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, at the least, the knowledge generally available to one of ordinary skill in the art would indicate from the references that it is desirable to provide a coating with desirably dispersed particles on a coated photoreceptor surface and that the combined references further provide a desirable dispersion process. (35 USC 102, 103 reject)

As to applicant's arguments as to claims 4 and 7: the Examiner notes that as discussed in the *Grounds of Rejection* above, Hochberg teaches a particles that include carbon black and a dye or pigment (i.e. colorant) and suggest the use of resin in the toner dispersion.

As to applicant's arguments as to claims 5-6: the Examiner notes that as discussed in the *Grounds of Rejection* above, Kawasaki teaches particle amounts and diameters as claimed. The combination of references suggests the claimed process, for the reasons as discussed with regard to claim 1 above.

As to applicant's arguments as to claims 8-9: the Examiner notes these arguments are moot, because as discussed in the *Grounds of Rejection* above, the suggestion to use the filter in remove overly large contaminants is provided by '459.

As to applicant's arguments with regard to claim 11: the Examiner has specifically provided the motivation to provide a gas carrier as suggested by Min as discussed in the *Grounds of Rejection* above. Applicant has provided no arguments as to why this motivation is improper.

As to applicant's arguments with regard to claims 10, 12 and 13: the Examiner notes that claim 13 is canceled, and thus the arguments are moot. As to claims 10 and 12, the Examiner notes that as discussed in the *Grounds of Rejection* above, Kawasaki teaches particle carrier and ultrasonic member to the extent claimed. See the individual references to claims 10 and 12. The combination of references suggests the claimed process, for the reasons as discussed with regard to claim 1 above.

As to applicants arguments with regard to claims 15-19: the Examiner notes that the arguments as to claim 15 are moot, because as discussed in the *Grounds of Rejection* above, the suggestion to use the sonicated filter is provided by '459. As to claim 16, the Examiner has indicated that it is conventionally known in the art of filtering that stream pressure affects the results of filtering, and applicant has not traversed this position of the Examiner. As to claim 17,

Art Unit: 1762

this suggestion is provided by Kawasaki as discussed with the individual reference to claim 17. As to claim 18, the Examiner has indicated as to why it would suggested to analyze the stream, and applicant has not traversed applicant's reasoning. As to claim 19, this suggestion is provided by Kawasaki as discussed with the individual reference to claim 19. The combination of references suggests the claimed process, for the reasons as discussed with regard to claim 1 above.

As to applicant's arguments as to claim 20: the Examiner notes that as discussed in the *Grounds of Rejection* above, Hochberg teaches particles that would be photosensitive. The combination of the references suggests the claimed process, for the reasons as discussed with regard to claim 1 above.


As to applicant's arguments with regard to claims 21-23: the Examiner notes that these arguments are moot, since as discussed in the *Grounds of Rejection* above, the suggestion to use the sonicated filter is provided by '459.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (703) 308-0078. The examiner can normally be reached on M-F(7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
KATHERINE A. BAREFORD  
PRIMARY EXAMINER  
GROUP 1100/200